

What is claimed is:

Claim 1: A computational graceful degradation method in a system comprising an encoder for encoding multimedia objects and multiplexing a plurality of encoded multimedia object bitstreams to transmit a multiplexed multimedia object bitstream; and a decoder for demultiplexing the multiplexed multimedia object bitstream received from the encoder, and decoding corresponding multimedia object bitstream for reconstruction to generate reconstructed multimedia to user, the method comprising the steps of:

determining, in the encoder, a priority of the respective objects according to a relative importance between the objects before multiplexing the encoded object bitstream for transmission, considering that the computational graceful degradation will be applied in the decoder; and

determining, in the decoder, an amount of computational power to be degraded in different ratio every object using priority information determined according to the respective objects.

Claim 2: The method as claimed in claim 1, wherein said step for determining the amount of computational power comprising the steps of:

after demultiplexing the multiplexed object bitstream, analyzing respective demultiplexed object bitstreams to predict the computational power required to decode the respective demultiplexed object bitstreams;

analyzing the computational power;

determining whether the computational power exceeds that required to decode the respective demultiplexed object bitstreams; and

determining an amount of computational power to be degraded every video object using the priority information, if the computational power of the object decoding units does not exceed that required to decode the respective demultiplexed object bitstreams.

Claim 3: A method for generating an object bitstream to be transmitted to an MPEG decoder system, the object bitstream corresponding to a plurality of objects of multimedia data, wherein each of the objects in the object bitstream is encoded, and priority information of respective objects according to a relative importance between respective objects is determined before multiplexing an encoded object bitstream for transmission to the MPEG decoder system.

Claim 4: An object bitstream transmitted from an MPEG encoder system to an MPEG decoder system, via a transmission medium, the object bitstream corresponding to a plurality of objects of multimedia data, wherein each of the objects in the object bitstream is encoded, and priority information of respective objects according to a relative importance between respective objects is determined before multiplexing an encoded object bitstream for transmission to the MPEG decoder system.